

## CUSTOMER CASE STUDY

## Optimizing Multi-Furnace Data Transfer and Calculations

Automating complex calculations and secure data transfer across multi-furnace industrial environments

**Solution:** BKOAI Data Automation    **Industry:** Industrial Manufacturing    **Use Case Focus:** Automated Data Processing

### GOALS

- Automate calculation and transfer of data across multiple industrial furnaces.
- Eliminate manual entry for thousands of unique operational tags.
- Establish a secure and organized asset structure for calculation results.
- Accelerate the project timeline from several months to a shorter execution period.

### SOLUTIONS

- Developed integration with an Excel mapping sheet to automate data extraction.
- Built tailored, code-based formulas adapted to each furnace's specific operations.
- Implemented an organized asset tree to structure and store calculation results.
- Established role-based permissions management to secure individual data tags.

### CHALLENGES

- Managing calculations across nearly twenty active industrial furnaces.
- Handling thousands of tags with unique calculation formulas for each furnace.
- Relying on manual calculation methods estimated to take several months of effort.
- Adapting to frequent changes in tag names or data source prefixes.

### RESULTS

- Reduced data processing timeline from several months of labor to one month.
- Automated data extraction to eliminate manual input across thousands of tags.
- Enabled seamless updates when changes were made to over two thousand tags.
- Secured operational data through structured access control and asset mapping.

## EXECUTIVE SUMMARY

BKOAI developed an automated data transfer and calculation solution to address the inefficiencies of manual industrial calculations across nearly twenty furnaces. By integrating directly with an Excel mapping sheet containing thousands of operational tags, the solution automates data extraction and applies tailored calculation formulas. This automation compressed a multi-month project timeline down to just one month of execution. Furthermore, the system built a secure, organized asset tree and enabled seamless adaptability, effortlessly handling changes to over two thousand tags without requiring manual recalculation.

## The Challenge of Industrial Scale Data Transfer

Industrial operators managing complex thermal assets often struggle with fragmented data across legacy systems. In this scenario, the operator faced the monumental task of calculating and transferring critical operational parameters across nearly twenty active furnaces. With thousands of unique tags and distinct formulas required for each unit, manual execution was highly inefficient. Engineers estimated that completing these calculations manually would require several months of tedious work. This administrative bottleneck stalled operational decision-making, increased the risk of manual input errors, and delayed critical analytical insights.

## Automating Complex Multi-Furnace Calculations

To overcome these processing challenges, BKOAI developed a sophisticated automated data processing solution. The system integrates directly with an Excel mapping sheet containing thousands of operational tags, enabling automated data extraction and eliminating manual entry entirely. Custom code identifies the required calculation formulas for each furnace based on the central mapping sheet. Additionally, the solution structures the final calculation results into an organized, easily searchable asset tree hierarchy. This asset tree features robust permissions management across all tags, safeguarding sensitive data security.

## Accelerating Timelines and Ensuring Flexibility

The automated system yielded immediate operational speed and flexibility. The overall project timeline was compressed from several months of manual effort down to just a single month of automated execution. Beyond sheer speed, the solution introduced critical adaptability to ongoing data changes. When the operator subsequently modified data source names and added prefixes to over two thousand tags, the system absorbed these updates seamlessly. This automated flexibility completely eliminated the need for labor-intensive recalculations and safeguarded long-term data continuity.